

**918.01 TRAFFIC BARRIER W BEAM.** Rail elements and end treatments shall conform to M 180, Type II or IV. In lieu of galvanizing, rail elements may be coated with a minimum of 5 mil dry film thickness of inorganic zinc rich primer conforming to 912.02.01. The primer shall be applied in conformance with Section 435 after the rail elements are fabricated.

**918.02 TRAFFIC BARRIER POSTS.** Posts shall conform to M 183 for steel and M 111 for galvanized coating. In lieu of galvanizing, posts may be coated with a minimum of 5 mil dry film thickness of inorganic zinc rich primer conforming to 912.02.01. The primer shall be applied as specified by the manufacturer after the posts are fabricated.

**918.03 HARDWARE FOR TRAFFIC BARRIERS.** Hardware for traffic barriers shall conform to M 183 for quality of steel and M 232 for galvanized coating.

**918.04 TIMBER RAIL AND POSTS.** Timber rail and posts shall conform to M 168.

**918.05 WIRE ROPE.** Wire rope shall conform to Federal Specification RR-W-410, Type I, General Purpose, Class 2, 6 by 19, improved plow steel, fiber core. The individual wire strands shall have a zinc coating of 0.8 oz/ft<sup>2</sup> when tested as specified in T 65.

## SECTION 919 — RESERVED

## SECTION 920 — LANDSCAPING

### 920.01 TOPSOIL AND SUBSOIL.

**920.01.01 Salvaged Topsoil.** Salvaged topsoil shall be that surface material to be salvaged from the project which has been classified as topsoil as specified in the Contract Documents.

**920.01.02 Furnished Topsoil.** Furnished topsoil shall be natural, friable surface soil uniform in color and texture and not supplied from the project. Topsoil shall be free from any parts of Johnsongrass, Canada Thistle, or Phragmites.

Topsoil shall have an organic content between 1.5 to 10.0 percent by weight when tested as specified in T 194. Furnished topsoil shall have a corrected pH value of not less than 6.0 nor more than 7.5.

Grading analysis shall be as follows:

SIEVE SIZE	MINIMUM PERCENT PASSING BY WEIGHT
2 in.	100
No. 4	90
No. 10	80

Topsoil shall be analyzed for sand, silt, and clay as specified in T 88.

Textural analysis shall be as follows:

SOIL PARTICLE SIZES mm	PERCENT PASSING BY WEIGHT
Sand (2.0 – 0.050)	20 – 75
Silt (0.050 – 0.002)	10 – 60
Clay (less than 0.002)	5 – 30

**920.01.03 Salvaged Subsoil.** Salvaged subsoil shall be material salvaged from the project that has been classified as subsoil as specified in the Contract Documents.

**920.01.04 Furnished Subsoil.** Furnished subsoil shall be natural, friable subsurface soil uniform in texture and not salvaged from the project. Subsoil shall be free from any parts of Johnsongrass, Canada Thistle, or Phragmites. The Contractor shall submit a source of supply for the material to the Administration for approval, prior to use. Material shall conform to Section 916 with the following exceptions:

- (a) The use of recycled portland cement concrete or recycled HMA pavement is prohibited.
- (b) The corrected pH value shall be 5.0 to 7.5.
- (c) The organic matter content shall be 0.1 to 5.0 percent.

Grading analysis shall be as follows:

SIEVE SIZE	MINIMUM PERCENT PASSING BY WEIGHT
2 in.	100
No. 4	85
No. 10	60

Material shall be analyzed for sand, silt and clay as specified in T 88.

The textural analysis shall be as follows:

SOIL PARTICLE SIZES mm	PERCENT PASSING BY WEIGHT
Sand (2.0 – 0.050)	20 – 85
Silt (0.050 – 0.002)	10 – 60
Clay (less than 0.002)	5 – 40

**920.02 AGRICULTURAL LIMESTONE.** Limestone shall contain not less than 85 percent calcium and magnesium carbonates. Dolomitic (magnesium) limestone shall contain at least 10 percent magnesium as magnesium oxide and 85 percent calcium and magnesium carbonates. Limestone shall conform to the following gradation:

SIEVE SIZE	MINIMUM PERCENT PASSING BY WEIGHT
No. 10	100
No. 20	98
No. 100	50

### 920.03 FERTILIZER.

**920.03.01 Granular and Liquid Fertilizer.** Fertilizer shall be commercial grade conforming to all State and Federal regulations and the Standards of the Association of Official Analytical Chemists.

Standard analyses shall be: 0–20–20, 5–20–20, 10–10–10, 10–20–10, 10–22–22 (50% nitrogen from 38–0–0 ureaform), 20–20–20 and 38–0–0

(ureaform). All analyses are subject to approval by the Engineer prior to application.

**920.03.02 Fertilizer Packets.** Fertilizer shall be contained in a slow release polyethylene perforated bag with micropore holes for controlled feeding. The bag shall contain 4 oz of water soluble fertilizer, analysis 16–8–16 to be effective for approximately eight years.

Minimum guaranteed analysis of the packets shall be as follows:

MINIMUM ANALYSIS	
Total Nitrogen (N) 16%	9% Ammoniacal Nitrogen (NH <sub>3</sub> N) 7% Nitrate Nitrogen (NO <sub>3</sub> N)
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )	8% from Ammonium Phosphate (NH <sub>4</sub> PO <sub>4</sub> )
Soluble Potash (K <sub>2</sub> O)	16% from Potassium Chloride (KCl)
Potential Acidity equivalent to 850 lb Calcium Carbonate (CaCO <sub>3</sub> ) per ton.	

**920.03.03 Fertilizer Tablets.** Fertilizer tablets shall consist of a minimum 21 gram tablet containing a slow release (two year) fertilizer, analysis 20–10–5.

Minimum guaranteed analysis of the tablets shall be as follows:

MINIMUM TABLET ANALYSIS	
Total Nitrogen (N) 20%	7% Water Soluble Organic Nitrogen 13% Water Insoluble Organic Nitrogen
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )	10%
Soluble Potash (K <sub>2</sub> O)	5%

**920.03.04 Iron Sulfate.** Iron sulfate shall be an approved horticultural product produced as a fertilizer for supplying iron and as a soil acidifier.

**920.04 SEED, SEED MIXES, AND SOD.**

All seed, seed mixes, and sod shall be free from Maryland prohibited noxious weed seeds and the following:

- Annual Bluegrass  
Bermudagrass  
Bindweed  
Cocklebur  
Corn Cockle  
Dodder
- Giant Foxtail  
Horse Nettle  
Spurred Anoda  
Wild Garlic  
Wild Onion

**920.04.01 Seed.** Seed will be sampled and tested by an inspector from the Turf and Seed Section, Maryland Department of Agriculture (MDA), Annapolis, Maryland. All seed containers shall be tagged with a MDA supervised mix program seed tag. Seed shall comply with the Maryland Seed Law, Agricultural Article of the Annotated Code of Maryland. The authority for seed names shall be the current printing of USDA, Agriculture 505 Handbook.

Grass and legume seeds shall conform to the latest construction directives regarding cultivars and varieties and the following:

SEED	PURITY NOT LESS THAN  %	WEED SEED NOT MORE THAN  %	MINIMUM GERMINATION (including hard seed)  %	HARD SEED NOT TO EXCEED  %
Kentucky Bluegrass ( <i>Poa pratensis</i> )	90	0.4	80	—
Canada Bluegrass ( <i>Poa compressa</i> )	90	0.5	80	—
Redtop ( <i>Agrostis gigantea</i> )	92	0.7	80	—
Lehmann's Lovegrass ( <i>Eragrostis lehmanniana</i> )	98	0.5	80	—
Foxtail Millet ( <i>Setaria italica</i> )	99	0.1	80	—
Hard and Fine Fescue ( <i>Festuca longifolia</i> )	98	0.5	85	—
Sheep Fescue ( <i>Festuca ovina</i> )	98	0.5	85	—
Tall Fescue ( <i>Festuca arundinacea</i> )	98	0.5	90	—
Chewings Fescue ( <i>Festuca rubra commutata</i> )	98	0.5	85	—
Oats ( <i>Avena sativa</i> )	99	0.5	90	—
Crownvetch ( <i>Coronilla varia</i> )	98	0.5	80	30
Serecia Lespedeza ( <i>Lespedeza cuneata</i> )	98	0.5	85	20
Birdsfoot Trefoil ( <i>Lotus corniculatus</i> )	97	0.7	85	20
Weeping Lovegrass ( <i>Eragrostis curvula</i> )	98	0.5	80	—
Barley ( <i>Hordeum vulgare</i> )	98	0.3	90	—
Rye Grain ( <i>Secale cereale</i> )	98	0.1	85	—
Perennial Ryegrass ( <i>Lolium perenniale</i> )	98	0.5	85	—

**920.04.02 Seed Mixes.** The Contractor or seed supplier shall notify the Turf and Seed Section, Maryland Department of Agriculture, Annapolis, Maryland, at least 10 days prior to the mixing date as to the hour, date, and location of the mixing operation. The Contractor or seed supplier shall assume charges for seed inspections and seed testing service. Seed mixes shall conform to the following:

**(a) Seed Mix No. 1**

85% Tall Fescue (Certified Seed Only)  
 10% Kentucky Bluegrass (Certified Seed Only)  
 5% Perennial Rye grass (Certified Seed Only)

**(b) Seed Mix No. 2**

60% Kentucky Bluegrass (Certified Seed Only)  
 40% Fine (Chewings, Creeping Red, Hard, Sheep) Fescue  
 (Certified Seed Only)

**(c) Temporary Seed Mix**

95% Barley or Rye  
 5% Foxtail Millet

**(d) Cover Companion Seed Mix.** Cover Companion Seed Mix for use with Woody Shrub Seed Mix shall conform to 705.01.01 Regional Areas.

**REGION 1**

35% Tall Fescue  
 35% Canada Bluegrass  
 15% Redtop  
 15% Birdsfoot trefoil (inoculant required)

**REGIONS 2 & 3**

30% Chewings Fescue  
 30% Canada Bluegrass  
 10% Redtop  
 30% Serecia Lespedeza (inoculant required)

**(e) Woody Shrub Seed Mix****REGIONS 1, 2, & 3**

- 25% Amur Honeysuckle (*Lonicera maackii*) or Tatarian Honeysuckle (*Lonicera tatarica*)
- 20% Bristly Locust (*Robina fertilis*)(inoculant required)
- 25% Shrub Lespedeza(*Lespedeza bicolor*)(inoculant required)
- 30% Arrowwood *Viburnum* (*Viburnum dentatum*)

The woody shrub seed mix shall have a minimum purity of 98 percent.

**(f) Wildflower Seed Mix****REGIONS 1, 2, & 3**

- 3 % Spurred Snapdragon (*Linaria maroccana*)
- 6 % Plains Coreopsis (*Coreopsis tinctoria*)
- 6 % Corn Poppy (*Papaver rhoeas*)
- 6 % Black Eyed Susan (*Rudbeckia hirta*)
- 3 % Scarlet Sage (*Salvia coccinea*)
- 3 % Lemon Mint (*Monarda citriodora*)
- 1.2 % Shasta Daisy (*Chrysanthemum maximum*)
- 1.2 % New England Aster (*Aster novae angliae*)
- 3 % Siberian Wallflower (*Cheiranthus allioni*)
- 0.6 % Evening Primrose (*Oenothera hookerii*)
- 1.2 % White Yarrow (*Achillea millefolium*)
- 6 % California Poppy (*Eschscholzia californica*)
- 7 % Dames Rocket (*Hesperis matronalis*)
- 3 % Rocket Larkspur (*Delphinium ajacis*)
- 7.6 % Tall Cornflower (*Centaurea cyanus*)
- 12.2 % Purple Cornflower (*Echinacea purpurea*)
- 6 % Lance-leaf Coreopsis (*Coreopsis lanceolata*)
- 1.5 % Yellow cosmos (*Cosmos sulphureus*)
- 1.5 % Purple Cosmos (*Cosmos bipinnatus*)
- 3 % Sweet William (*Dianthus barbatus*)
- 6.6 % Crimson Clover (*Trifolium incarnatum*)
- 1.2 % Firewheel (*Gaillardia aristata*)
- 6 % Blanket Flower (*Gaillardia pulchella*)
- 3 % Calendula (*Calendula officianalis*)
- 1.2 % Sunflower Autumn Beauty (*Helianthus Autumn Beauty*)

The wildflower seed mix shall conform to the following:

- 75% Minimum Germination
- 98% Minimum Purity



**(g) Cover Companion Seed for use with Wildflower Seed Mix.**

100% Hard Fescue (*Festuca longifolia*) or Sheep Fescue (*Festuca ovina*)

**920.04.03 Sod.** Sod shall either be Maryland Certified or Maryland Approved Sod and shall comply with the Maryland Turfgrass Law and Certification Regulations of the Annotated Code of Maryland. Each load of sod shall bear a Maryland State Approved or Certified label at the time of delivery on the job.

The sod shall be well rooted and shall be grown in the State of Maryland. It shall be field grown for a minimum of 12 months. Once cut and rolled, sod shall be placed within 48 hours. It shall be cut in strips not less than 14 in. or more than 20 in. wide. Sod shall be machine cut to a uniform thickness of 3/4 in., plus or minus 1/4 in., at the time of cutting. Thickness shall exclude top growth and thatch. Sod shall be relatively free of thatch, 3/8 in. or less at time of cutting. Prior to cutting, sod shall be mowed to a height of 1-1/2 to 2-1/2 in. for Bluegrass, 3/4 to 1 in. for Bermudagrass, and 2 to 2-1/2 in. for Tall Fescue.

**920.05 MULCH.**

**920.05.01 Shredded Hardwood Bark.** Shredded hardwood bark shall consist of the bark from hardwood trees which has been milled and screened to a maximum 4 in. particle size and provide a uniform texture free from sawdust, toxic substances, and foreign materials.

**920.05.02 Wood Chips.** Wood chips shall be produced by a wood chipping machine and be composted. Wood chips shall be a maximum size of 2 x 2 x 0.5 in. Composted wood chips shall be free of toxic substances and any foreign materials.

Grading analysis shall be as follows:

SIEVE SIZE (in.)	MAXIMUM PERCENT PASSING BY VOLUME
2	100
1	30
0.5	10

**920.05.03 Straw and Hay.** Straw shall consist of thoroughly threshed cereal grains. Hay shall consist of forage grasses and legumes. Straw and

hay shall be free of noxious weeds and weed seeds as specified in 920.04. Straw and hay shall be visually inspected to ensure that it is free from mold, foreign substances, plant parts of Canada Thistle, Johnsongrass, or Phragmites, and is in an air-dry condition suitable for placing with mulch blower equipment.

**920.05.04 Wood Cellulose Fiber.** Wood cellulose fiber shall be a processed wood product having uniform fiber characteristics which will remain in uniform suspension in water under agitation and will blend with seed, fertilizer, and other additives to form a homogeneous slurry. The fiber shall perform satisfactorily in hydraulic seeding equipment without clogging or damaging the system. The slurry shall contain a green dye that provides easy visual inspection for uniformity of application.

The manufacturer shall furnish certification as specified in TC-1.02 showing conformance to the following:

WOOD CELLULOSE FIBER REQUIREMENTS	
Particle Length, in.	Approximately 1/2
Particle Thickness, in.	Approximately 1/16
Net Dry Weight Content	Minimum as stated on bag
TAPPI* T 509, pH	4.0 – 8.5
Ash Content, TAPPI* Standard T 413, % max	7.0
Water Holding Capacity, % min	90

\* Technical Association of Pulp and Paper Industry

The material shall be delivered in packages of uniform weight, which shall not exceed 75 lb net weight and shall bear the name of the manufacturer, the net weight, and a supplemental statement of the net weight content.

**920.06 SOIL STABILIZATION MATTING.** Soil stabilization matting shall be supplied in 40 to 96 in. width rolls. The material shall be selected from the Administration’s Office of Materials and Technology Prequalified Materials List for the use specified.

**Type A.** Type A soil stabilization matting shall consist of a machine produced mat of degradable natural or man made fibers. Matting shall be smolder resistant. When a chemical is used, it shall be nonleaching, nontoxic to vegetation and the germination of seed, and noninjurious to the skin.

Type A matting shall have a uniform thickness and distribution of fibers throughout. The top and bottom of the matting shall be covered with a degradable extruded plastic netting having a maximum mesh opening of 2 x 2 in. or covered on the top side with netting machine sewn or bonded on 2 in. centers along the longitudinal axis of the material. The average breaking strength of any two strands of netting shall be 5 lb minimum. The netting shall be entwined with the matting fibers in a manner which shall provide sufficient reinforcement against damage during handling and placement and shall resist degradation for a minimum of six months and a maximum of one year.

**Type B.** Type B soil stabilization matting shall consist of a machine produced mat of nondegradable fibers or elements and have a uniform thickness and distribution of weave throughout.

**920.06.01 Staples for Type A Soil Stabilization Matting and Sod.** Staples shall be U or T shaped steel wire having minimum gauges of No. 11 and No. 8, respectively. The U shaped staples shall average 1 to 1-1/2 in. wide. The T shaped staples shall have a main and a secondary leg and a 4 in. head. For the length of the staples to be used with the Type A matting, refer to 709.03.03. For sod the U shaped staples shall be a minimum length of 6 in. and the T staples shall have a main leg length of 8 in. and a secondary leg length of 1 in.

**920.06.02 Fasteners for Type B Soil Stabilization Matting.** Fasteners shall be staples or wood stakes. Staples shall be U or T shaped steel wire having minimum gauges of No. 11 and No. 8, respectively. The U shaped staples shall average 1 to 1-1/2 in. wide. The T shaped staples shall have a main and secondary leg and a 4 in. head. Wood stakes shall be sound, rough sawn, hardwood measuring 1 x 3 in. at the top. For the length of the fasteners to be used with the Type B matting, refer to 709.03.03.

## **920.07 PLANT MATERIALS.**

**920.07.01 Plants.** All plants, unless otherwise specifically permitted, shall conform to the standards of the current edition of "American Standard for Nursery Stock" as approved by the American Standards Institute, Inc.

All plant grades shall be those established in the current edition of American Standards for Nursery Stock manual. Only one size per grade will be listed rather than a size range. The one size shall mean the minimum size for that grade and shall include plants from that size up to but not including the next larger grade size.

All plants, unless otherwise specifically permitted, shall be nursery grown and shall have been grown within plant hardiness zones 5, 6, 7 or

the Virginia portion of zone 8A as recorded in the current edition of "Plant Hardiness Zone Map," prepared by the U.S. National Arboretum, Agricultural Research Service, U.S. Department of Agriculture.

All plant materials shall have normal, well developed branches and a vigorous root system. They shall be healthy plants free from physical defects, plant diseases, and insect pests. Plant materials grown in fields or blocks which show evidence of containing any parts of Johnsongrass or Canada Thistle will be rejected.

Shade and flowering trees shall be symmetrically balanced. Major branches shall not have V shaped crotches capable of causing structural weakness. Trunks shall be free of unhealed branch removal wounds greater than a 1 in. diameter.

Shade trees shall have a single main trunk. Trunks shall be free of branches below the following heights:

CALIPER in.	HEIGHT ft
1-1/2 to 2-1/2	5
3	6

**920.07.02 Plant Names.** The authority for all plant names shall be the current printing of "Hortus Third", except for *Ilex opaca* (American Holly) which shall be the current edition of the International Checklist of Cultivated *Ilex*. Representative samples of every shipment of plant materials shall be labeled as to genus, species, and specified size.

**Approved Varieties of *Ilex Opaca*.** When approved varieties of *Ilex opaca* are specified, the Contractor shall select from the following list of cultivated varieties.

ILEX OPACA	
Female	Male
Miss Helen Patterson Wyetta Jersey Princess Satyr Hill Old Heavy Berry Dan Fenton	Jersey Knight David Leather Leaf

The Contractor shall supply 90 percent female varieties and 10 percent male varieties unless otherwise specified by the Engineer.

**920.07.03 Plant Inspection.** The initial inspection for conformance with these Specifications will be made at the nursery, holding area, or job site. The condition of all plant material will be subject to reinspection for the life of the Contract. Inspection and tagging of plant material with an Administration seal prior to digging will be at the option of the Engineer. Material arriving with broken seals (if tagging is required), broken or loose root balls, mechanical damage, insufficient protection, and shriveled or undeveloped roots will be rejected. All container grown plants shall be well rooted, vigorous and established in the size pot specified, shall have well balanced tops for their pot size, and shall not be root bound.

All plant materials shall be declared and certified free from disease and insects of any kind as required by law for the necessary interstate or interdistrict transportation.

**920.07.04 Plant Digging and Handling.** All plants shall be dug in conformance with the digging Specifications in the current edition of "American Standard for Nursery Stock," unless otherwise specified.

All bare root deciduous plants shall be shipped in a dormant condition. Roots shall be adequately protected and kept moist.

**920.07.05 Substitute Plants.** No substitutions shall be made without the permission of the Engineer.

In cases where plant materials are not available at the time of planting, the Contractor shall submit, in writing, evidence that the plants are unavailable. The Engineer will determine a suitable substitution.

**920.07.06 Maryland Plant Dealer's License.**

All Contractors performing planting work and suppliers of trees, shrubs, vines, seedling stock, perennials, and bulbs shall possess a Maryland Plant Dealer's License as required by the Maryland Plant Disease Control Law of the Annotated Code of Maryland.

Out-of-state Contractors may substitute a dealers license from their home state in lieu of the Maryland license. Contractors not possessing a similar Plant Dealer's License from their home state shall obtain a License from the Maryland Department of Agriculture.

**920.08 MISCELLANEOUS LANDSCAPING ITEMS.**

**920.08.01 Water.** Water used in the planting, establishing, or caring for vegetation shall be free from any substance that is injurious to plant life.

**920.08.02 Peat Moss.** Peat moss shall be milled sphagnum peat moss and shall be free from woody substances.

**920.08.03 Peat Humus.** Peat humus shall originate from fresh water sites of sedge and reed peat deposits in which the organic matter consists of incompletely decomposed plant residues containing a minimum of 70 percent organic material by weight and a negligible amount of woody matter by visual inspection. Inorganic material shall consist only of sand, silt and clay without inclusion of gravel, debris or toxic compounds. Peat humus with a pH value of less than 4.5 shall be corrected to a value of 6.5 by the addition of limestone as directed by the Engineer. Samples of peat humus will be taken by the Engineer and will be tested for conformance to Federal Specification Q-P-166.

**920.08.04 Manure.** Manure shall be dehydrated cow manure as approved by the Engineer.

**920.08.05 Compost.** Compost shall be screened, approved by the State Agencies listed below, and subject to approval by the Engineer. Compost shall have a pH between 6.0 and 7.5 except when specified in Section 710 where it shall have a pH between 6.0 and 7.0. It shall be stable and not reheat upon restacking. Compost shall have a moisture content between 30 and 55 percent, a particle size of 0.5 in. or less.

Grading analysis shall be as follows:

SIEVE SIZE	MAXIMUM PERCENT PASSING BY VOLUME
No. 4	90
No. 40	25
No. 200	2.2

Compost shall be one of the following types:

- (a) **Biosolids Compost (Type A).** Biosolids compost will be approved for distribution by the Maryland Department of the Environment. Compost shall have a soluble salt concentration not to exceed 10 dS (mmhos/cm).

- (b) **Source-Separated Compost (Type B).** Source-separated compost will be approved by the Maryland Department of Agriculture (MDA). Compost shall be produced by a MDA certified compost operator. Compost shall have a soluble salt concentration not to exceed 5 dS (mmhos/cm).

Source-separated compost shall be one of the following types:

- (1) Tree leaf compost.
- (2) Non-tree leaf compost. When compost is from lawn clippings, it shall be tested for contaminants in conformance with COMAR 15.18.04.05.

**920.08.06 Insecticide.** Insecticide shall be an EPA approved chemical that provides protection against insect pests. The insecticide will be subject to approval by the Engineer.

**920.08.07 Herbicide.** Herbicide shall be an EPA approved chemical to control and prevent regrowth of undesirable vegetation. The herbicide will be subject to approval by the Engineer.

**920.08.08 Marking Dye.** Marking dye shall be herbicide compatible and oil or water soluble, as required. Marking dye shall be from a commercial source as approved by the Engineer.

**920.08.09 Stakes.** Stakes for supporting trees shall be rough sawn, straight grain hardwood reasonably free from knot holes, bark, wane, warp, and splits, as determined by the Engineer. Stakes shall be full cut 2 X 2 in. thickness. The length shall be as specified in the Contract Documents.

**920.08.10 Outline Stakes.** Outline stakes shall be full cut 1-3/4 X 1-3/4 in. sound hardwood, 48 in. long, as approved by the Engineer. They shall have the words "MOW LIMIT" stenciled in orange paint vertically on one side in 1-1/2 in. letters beginning within 2 in. from the top of the stake.

**920.08.11 Wire.** Wire shall be No. 12 gauge and 14 gauge new annealed galvanized wire, as approved by the Engineer.

**920.08.12 Wire Rope.** Wire rope shall be 1/4 in. zinc coated steel wire seven strand as commonly used for guying large trees and as approved by the Engineer.

**920.08.13 Cable Clamps.** Cable clamps shall be galvanized or cadmium plated as approved by the Engineer.

**920.08.14 Hose.** Hose shall be 5/8 in. inside diameter corded synthetic rubber hose or as approved by the Engineer.

**920.08.15 Turnbuckles.** Turnbuckles shall be galvanized or cadmium plated with 4-1/2 in. openings and 5/16 in. threaded ends with screw eyes.

**920.08.16 Anchors.** Tree anchors shall be earth anchors of a type commonly used for anchoring large trees and as approved by the Engineer.

**920.08.17 Wrapping Material.** Wrapping material for trees shall be clean new burlap 6 to 7 oz/yd<sup>2</sup> in strips 4 to 6 in. wide.

**920.08.18 Twine.** Twine used for tying wrapping on trees shall be three ply untreated jute twine as approved by the Engineer.

**920.08.19 Antidesiccant.** Antidesiccant shall be an approved emulsion which will provide a film over plant surfaces permeable enough to permit transpiration.

**920.08.20 Tree Wound Dressing.** Tree wound dressing shall be an asphalt based emulsion prepared especially for tree pruning operations.

**920.08.21 Pegs.** Pegs shall be wooden wedges 1/2 x 1 x 6 in. to 1/2 x 1 x 12 in. as approved by the Engineer.

**920.08.22 Water Absorbent Gel.** Water absorbent gel shall be a cross linked polyacrylamide horticultural product used to maintain moisture around bare root plants and as a soil conditioner. Formulas used shall conform to the manufacturer's recommendations.

## SECTION 921 — MISCELLANEOUS

**921.01 WATER FOR CONCRETE MIXES.** Water shall conform to the pH requirements of T 26, Method B and shall be clear. If questionable quality is suspected, the water shall conform to the limits of the comparison tests with distilled water as specified in T 26. The chloride concentration of water used in mixing and curing of portland cement concrete shall be determined in conformance with D 512 and shall not exceed the following limits:

Bridge Superstructure and Prestressed Concrete	500 ppm
Latex Modified Concrete	50 ppm
Other Concrete and Water Used in Curing	1000 ppm